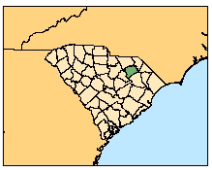
DARLINGTON COUNTY, SC



Hazard Profile for 2008

An Excerpt from the State of South Carolina Hazard Assessment for 2008

I. Summary

Darlington County is vulnerable to both natural (hurricanes/tropical storm) and technological (hazardous material incidents) hazards. Hurricane/tropical storms produce the greatest monetary damage; however, the recurrence interval is 19.8 years, making it a relatively rare event. Wildfires, thunderstorms, hail, and hazardous material incidents are some of the prominent hazards that regularly affect the county, based on past occurrences.

II. Social Vulnerability

Social vulnerability examines the socioeconomic and demographic character of places and helps to explain the variation in the population's ability to prepare for and respond to hazards. The Social Vulnerability Index (SoVI) is a statistical measure that compares social vulnerability to environmental hazards among places, and then visually displays these comparisons on a map. SoVI thus illustrates where there is uneven capacity for preparedness and response and where additional planning and response resources might be used most effectively to help residents. The variables used in determining the Social Vulnerability (SoVI) score along with how SoVI is calculated are available on the Hazards and Vulnerability Research Institute SoVI website (http://www.sovius.org).

Within Darlington County, most of the census tracts exhibit moderate levels of social vulnerability. The exceptions are Census tracts in Darlington (city) and in Hartsville, which have high SoVI scores and elevated levels of social vulnerability. Figure 1 provides maps of the Darlington County depicting (on the left) social vulnerability by census tract and (on the right) cities and major roads.

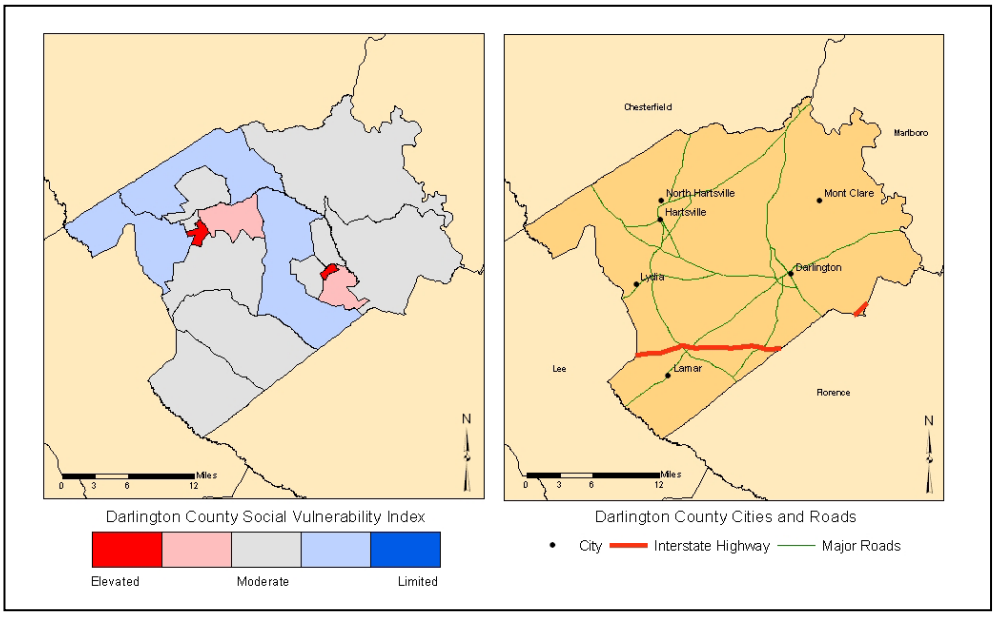


FIGURE 1. The Social Vulnerability for Darlington County, SC by US Census tracts and a general reference map of Darlington County.

III. Terms

Disaster – a singular hazard event that results in widespread human losses or has profound impacts on local environments.

Frequency – a calculated number showing the chance of an event occurring each year based on the historic record.

Hazard – the potential threat to humans as well as the impact of an event on society and the environment.

Recurrence – a calculated number that examines the expected time interval between events based on the historic record.

Risk – the likelihood or probability of occurrence of a hazard or adverse event.

Vulnerability – the potential for loss or the capacity to suffer harm from a hazard event.

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IV. Hazard Identification

The estimated recurrence of a hazard is a useful element (based on event frequency) for distinguishing between infrequent hazards like earthquakes, and frequent hazards such as hazardous materials incidents or traffic accidents. The most common hazard events in Darlington County are hazardous material accidents, severe thunderstorms and wind, hail, and wildfires. Hurricanes/tropical storms and ocean/lake surf are hazards with the lowest recurrence intervals. The recurrence and hazard frequency table can be seen in Table 1.

TABLE 1. The Hazard Profile for Darlington County, SC.

Hazard[a]	Number of Events	Years in Record	Recurrence Interval (Years)	Hazard Frequency (Percent Chance per Year)
Coastal Events				
Hurricane/Tropical Storm	8	158	19.75	5.06
Ocean & Lake Surf[b]	1	16	16.00	6.25
Waterspout	0	16	*	*
Dam Failure	-	-	-	-
Drought	9	59	6.56	15.25
Flood	6	59	9.83	10.17
Fog	0	12	*	*
Geophysical Events				
Avalanche	0	49	*	*
Earthquake	0	310	*	*
Landslide	0	49	*	*
Human-Induced Events				
Civil Disturbance	-	-	-	-
Hazardous Materials (Hazmat)	99	22	<0.50	450.00**
Nuclear Power Plant	0	8	*	*
Terrorism	0	29	*	*
Transportation (Motor Vehicle)	13,205	10	<0.50	132,050.00**
Severe Thunderstorm Events				
Funnel Cloud	1	16	16.00	6.25
Hail	78	59	0.76	132.20**
Heavy Precipitation	7	15	2.14	46.67
Lightning	5	16	3.20	31.25
Thunderstorm & Wind	135	59	<0.50	228.81**
Tornado	20	59	2.95	33.90
Temperature Extremes	0	16	*	*
Wildfire	2,400	21	<0.50	11,428.57**
Winter Weather (Snow & Ice)	12	59	4.92	20.34

[a] Data Sources: National Climatic Data Center (www.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storm); National Geophysical Data Center (www.ngdc.noaa.gov/hazard/

[b] Includes coastal flooding, coastal erosion, coastal winds

* Unable to calculate (cannot divide by zero)

** Percent is greater than 100.00, therefore hazard can be expected to occur more than once per year

\- Data Unavailable

V. Hazard Loss Information

When compared to South Carolina as a whole, Darlington County has a higher probability of loss-producing hail, hurricane/tropical storm, tornado, and winter weather events, and is slightly above the state average for heat. This comparison between the county and state in Figure 2 (page 3) shows hazards that exceeded the state mean in red type. Thunderstorms, wind, and flooding are below the state mean indicating that these hazards have historically produced fewer losses for the county when compared to the state as a whole.

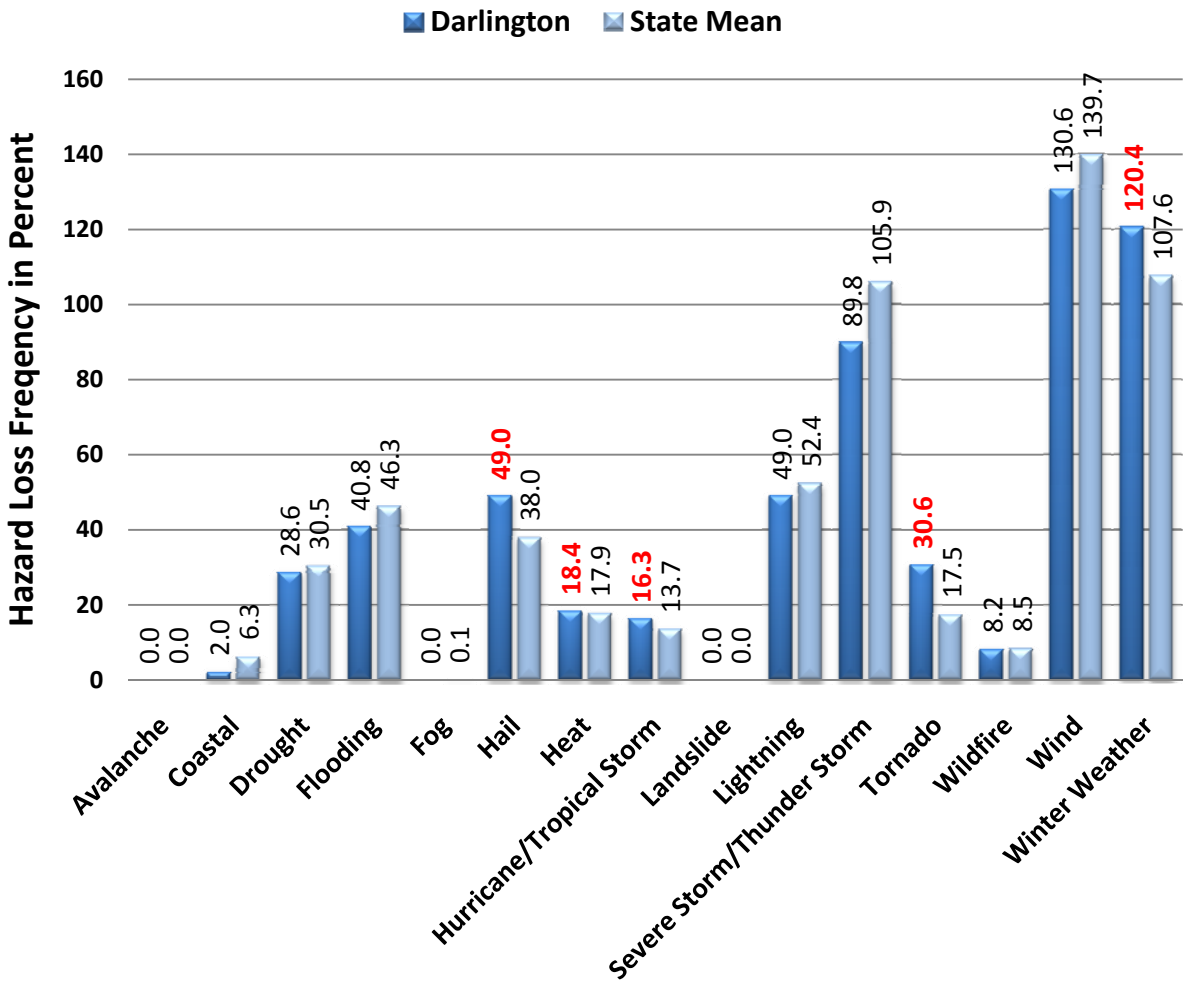

FIGURE 2. The historic loss causing hazard frequency between 1960 and 2008 for Darlington County compared to South Carolina as reported in SHELDUS. Percentage numbers indicated in red are when the county total exceeds the state mean. Also, a hazard that is identified in the National Climatic Data Center Storm Data reports as a multiple event hazard (flooding, winter weather, coastal storm), and given a statewide or regional location, the impact of the event is equally distributed amongst the counties involved.

Another way of determining how vulnerable a county is to particular hazards is by examining the amount of damage caused by past events. In Figure 3 (page 4), the cumulative amount of damage from 1960 to 2008 based on twelve hazard types is computed from the Hazards and Vulnerability Research Institute's SHELDUS database (available at http://www.sheldus.org). The historic losses in Georgetown County exceed $150 million, and are largely due to hurricanes and tropical storms, followed by winter weather, and drought. Hurricane/tropical storm represented 64% of the damage in Darlington County. While significant for the county, these cumulative losses represent 1.6% of the state's total overall

Hazard	Total Damage (in 2008 dollars)	Percent of State
Coastal	$6,476	0.01%
Drought	$14,055,942	2.26%
Flooding	$933,730	0.63%
Hail	$1,252,488	1.26%
Heat	$11,286,643	2.26%
Hurricane/ Tropical Storm	$96,101,543	1.81%
Lightning	$335,756	0.66%
Severe Storm/ Thunder Storm	$1,745,696	0.86%
Tornado	$3,102,877	1.36%
Wildfire	$334,042	2.18%
Wind	$1,881,684	1.34%
Winter Weather	$19,928,926	2.30%
Darlington - Total	**$150,965,804**	**1.64%**

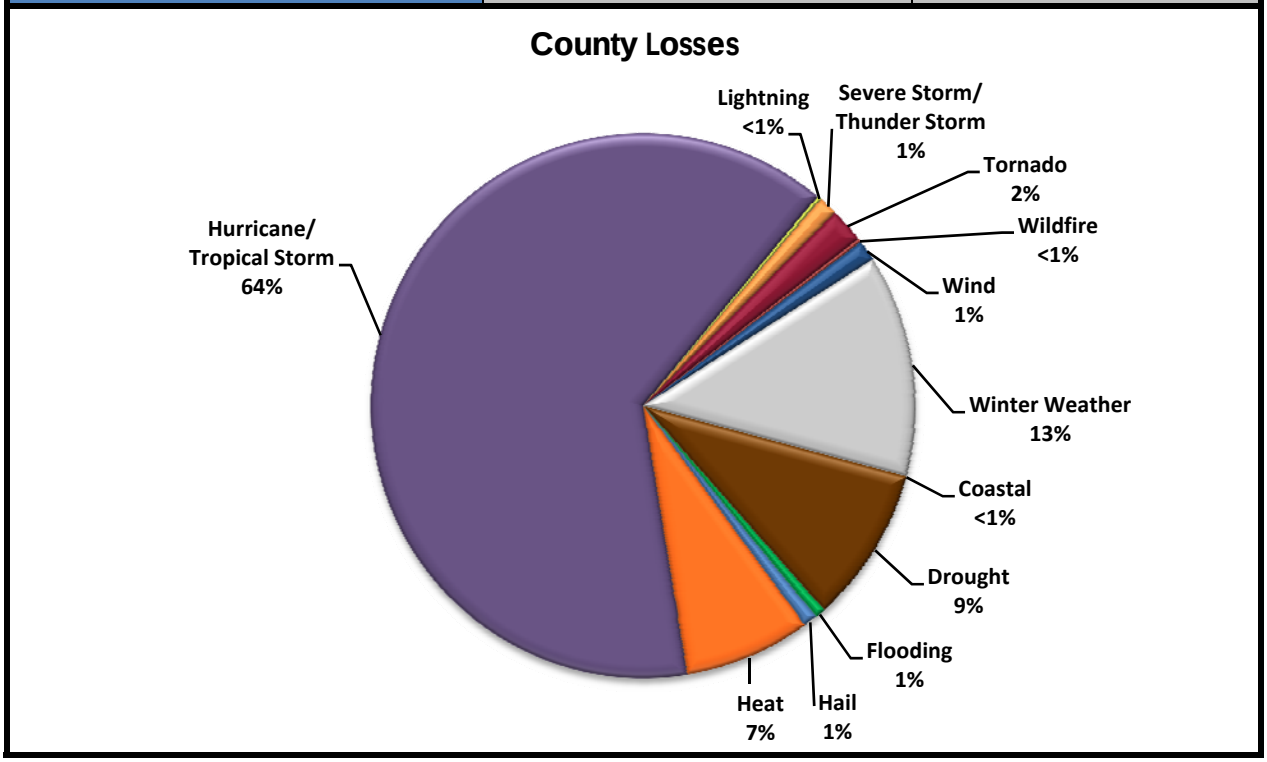

FIGURE 3. Historic Hazard Event Damages (property and crop) between 1960 and 2008 for Darlington County, SC.